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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,970	03/16/2004	Jianxin Liu	2089-001D1	2363
48740	7590	08/25/2005	EXAMINER	
IP & INTERNET LAW NORTH, LLC P.O. BOX 38 ZELIENOPLE, PA 16063			MAI, NGOCLAN THI	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 08/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/801,970

Applicant(s)

LIU ET AL.

Examiner

Ngoclan T. Mai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/16/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Upon further consideration of the restriction requirement and applicant's remark filed 5/13/05, the restriction requirement is withdrawn.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 7-64 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation "the highest sintering temperature at which the green article can be sintered without slumping" in claims 7, 14, 23, 25, 38, 51, and 58 renders to the claims indefinite because it is a relative term which renders the claims indefinite. The term "highest" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The limitation of step b) in claims 51 and 58 implies that at least one step of applying the powder mixture into layer must be conducted before selectively binding is occurred. However applicant is not definitely claiming that. Note that implied limitation is improper.

4. Claims 7-64 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

REASONS FOR ALLOWANCE

5. The following is an examiner's statement of reasons for allowance:

Wang et al disclosed an improved iron powder composition suitable for the production of a sintered ferrous product by liquid phase sintering. The iron powder composition comprises iron-base

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powder intimately blended with copper base alloy, i.e. prealloyed metal, powder in an amount sufficient to provide a liquid phase during subsequent sintering operation. Col. 2, lines 62-67. The copper base alloy is of fine powder and present in the amount between 10% 25% of the composition. Col. 1, lines 64-66 and col. 2, line 68 to col. 3, line 5.

Morcaski et al discloses a liquid phase sintered powder metal particle comprising a compressible base iron powder, graphite and a 1-5 wt% master alloy powder, i.e. prealloyed metal powder. The iron-based powder has a maximum particle size about 100 microns and the master alloy powder has an average particle size of about 10 microns and maximum particle size being 40 microns. The liquid phase sintering is performed at the master alloy melting temperature.


The claims are different from the prior art in that there is no teaching of mixing with a major volume fraction of a relatively coarse prealloyed metal powder and a minor or smaller volume of a relative fine metal powder which is solid at the highest sintering temperature. In addition the prior art fails to teach the claimed ratio of the mean particle size of the relatively fine metal powder to the mean particle size of the relatively coarse prealloyed metal.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoclan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 9:30-6:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Ngoclan T. Mai
Primary Examiner
Art Unit 1742

n.m.